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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,221	02/22/2002	Wen-Hao Hsu	20128.0015U1	1651
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THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			DORVIL, RICHEMOND	
			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/081,221

Applicant(s)

HSU, WEN-HAO

Examiner

Richmond Dorvil

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 103***

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patrick et al., U.S. Patent No. 5,956,463 in view of Applicant's prior art.

As per claim 1, Patrick et al. teach a voice signal (Fig 1, element 10) collection device for receiving the animal voice (col. 2, line 25) and outputting a voice signal',

a feature extraction module (Fig 3, element 36) for extracting a target parameter vector from the voice signal, the target parameter being Mel-Scale Cepstrum parameter, (see col. 6, lines 30-36);

at least one storage device (col. 3, line 10) for storing a plurality of sample parameter vectors extracted from a plurality of known animal voices and species data corresponding to the sample parameter vectors; a comparison module (classification modules) for comparing the target parameter with the sample parameter vectors to find a matching sample parameter vector similar to the parameter vector (see col. 8, lines 38-55);

and at least one output device for displaying the species data corresponding to the matching sample parameter vector, (see Fig. 2, item 20).

Patrick et al. fail to explicitly teach that the target parameter are Mel-Scale Cepstrum parameter vector obtained by a triangular bandpass filter and that the comparison module is using a DTW or HMM method. However, these features are well known in the art as admitted by

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applicant, (Paragraph 0017 of the specification) which clearly states that There are many methods known in the art for extracting a parameter according to the rhythm, tune or timbre of a voice or a known voice. For example, ...a triangular bandpass filter could be used to obtain a Mel-Scale Cepstrum parameter vector and so on. Furthermore, there are many methods known in the art for comparing such parameters, such as DTW (Dynamic Time Warping) and HMM (Hidden Markov Model). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use triangular bandpass filter to obtain the Mel cepstrum parameter, disclosed in Patrick et al., (see col. 6, lines 30-35) and a DTW or HMM for comparing the parameters to improve the detection of features in voice signal especially in the presence of noise.

As per claim 2, Patrick teaches all the limitations of claim 1. Patrick et al. further teach a plurality of sample parameter vectors correspond to one of the species data (inherent in classification module, Fig 3, element 40).

As per claim 4, Patrick et al. teach all the limitations of claim 1. Patrick et al. further teach that the target parameter vector (identify the family, col. 2, line 31) and the matching sample parameter (identify the family, col. 2, lines 28-32) vector have a minimum distance there between (specified distance, col.7, lines 47-50).

As per claim 5, Patrick et al. teach a method for recognizing animal species from an animal voice, (see col. 1, lines 50-60) comprising:

converting an animal voice into a target signal (col.3, lines 4-7).,extracting a target parameter vector from the target signal (feature extraction module, Fig 3 element 36), comparing the target parameter vector with a plurality of sample parameter vectors stored in a parameter

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database to obtain a matching sample parameter vector with a similar to target parameter vector (identification module, Fig 1, element 14) outputting species data corresponding to the matching sample parameter vector stored in the parameter database if the matching sample parameter vector is found (Fig. 4, estimate output by classification and combine modules, elements 50a and 50b and 52).

Patrick et al fail to explicitly teach that the target parameter are Mel-Scale Cepstrum parameter vector obtained by a triangular bandpass filter and that the comparison module is using a DTW or HMM method. However, these features are well known in the art as admitted by applicant, (Paragraph 0017 of the specification) which clearly states that There are many methods known in the art for extracting a parameter according to the rhythm, tune or timbre of a voice or a known voice. For example, ...a triangular bandpass filter could be used to obtain a Mel-Scale Cepstrum parameter vector and so on. Furthermore, there are many methods known in the art for comparing such parameters, such as DTW (Dynamic Time Warping) and HMM (Hidden Markov Model). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use triangular bandpass filter to obtain the Mel cepstrum parameter and a DTW or HMM for comparing the parameters to improve the detection of features in voice signal especially in the presence of noise.

As per claim 6, Patrick et al. teach all the limitations of claim 5. Patrick et al. further teach a method comprising:

converting a known animal voice into a target signal (Fig 2, element 22),

extracting a sample parameter (Fig 3, element 36) vector from the sample signal,

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storing the sample parameter vector into the parameter database (col.3, line 6) and storing species data corresponding to the sample parameter vector into the parameter database (the acoustic data received, col. 3 Lines 4-7)

As per claim 8, Patrick et al teach all the limitations of claim 5. Patrick et al. further teach a method wherein a sample parameter vectors correspond to one of the species data (classify further the NQFDSS into the specie of the animal, col. 8, lines 38-39).

As per claim 9, Patrick teaches all the limitations of claim 5. Patrick et al. further teach a method wherein the matching sample parameter vector and the target parameter has a minimum distance there between (implied by sample that is outside the specified distance from all the cluster is termed "unknown", col. 7, line 47-50).

As per claim 3, Patrick et al. teach all the limitations of claim 1. Patrick et al. fail to explicitly teach an apparatus wherein the feature extraction module extracts parameter according to rhythm, tune, or timbre of a voice signal. However, Patrick suggest of using acoustical data to analyze calls of all birds (suggested by "calls of all birds", col. 8, line 63). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention to use Patrick's monitoring system to analyze the vocalizations. The suggestion or motivation for doing so is to use this typical characteristic feature to distinguish different type of birds.

As per claim 7, Patrick et al. teach all the limitations of claims 5 and 6. Patrick et al fail to teach sample parameter vectors according to rhythm, tune, or timbre of a voice signal. However, Patrick further suggests the method wherein the steps of extracting the target parameter vector (the segmentation module 34 receives the digitized file 32, col. 5, lines 42-43) and the sample parameter vectors (input points, col. 5, 44) are according the rhythm, tune or time

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of the target signal and the sample signal respectively (suggested by "calls" of all birds, col. 5, line 47). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention to use Patrick's system to analyze environmental sounds. The suggestion or motivation for doing so is to identify the family, genus, or the species.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Abdelali Serrou whose telephone number is (571) 272-7638. The examiner can normally be reached on Monday Through Friday 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER